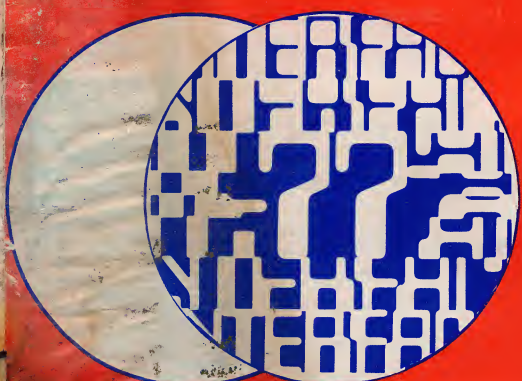
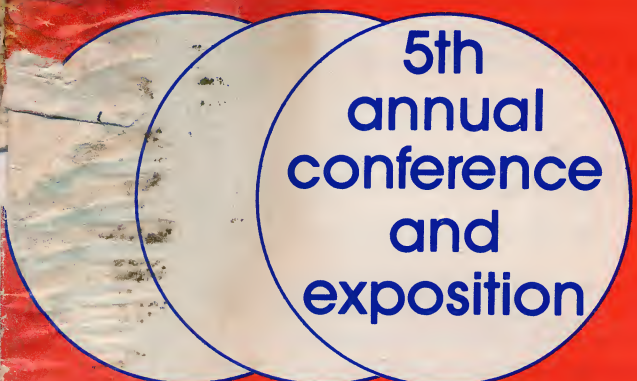


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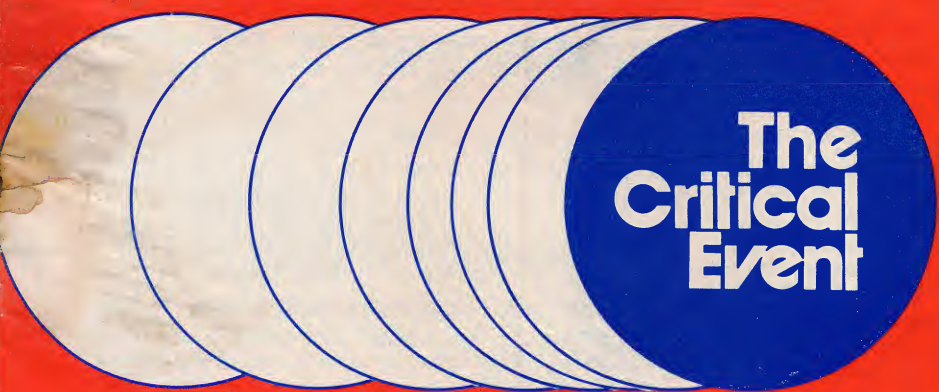
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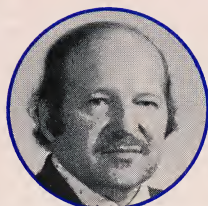


Atlanta
March 28-30
1977



The
Critical
Event

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Sheldon G. Adelson
Conference Director
INTERFACE '77



James M. Morris
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If productivity in computing and communicating data is important to you, whether you're Operations, General or Financial Management...Data Processing, Data Communications or Communications Management...novice, more advanced, or sophisticated computer/communications practitioner...serving business, government, or the public, INTERFACE '77 has an information-packed, 3-day Conference and Exposition...to meet your specific needs!

Hear 175 speakers reveal the secrets of data communications success in 75 sessions structured to accommodate your background. See over 150 companies exhibiting the latest data communications products, systems and services. Exchange concepts and experiences with leading users, suppliers and consultants in the industry.

Co-sponsored by DATAMATION Magazine, INTERFACE continues to be the forum for information on all aspects of data communications. On March 28-30, Atlanta's Georgia World Congress Center will host our fifth conference and exposition, INTERFACE '77 - "the critical event."

Plan to be there with your key people; see registration details on page 19.

INTERFACE '77 PROGRAM COMMITTEE

The INTERFACE '77 Program Committee in conjunction with leading data communications users, suppliers and consultants has formulated program policy and procedure, coordinated speaker selection, and organized session content. Its members are all leading experts in the field of data communications.

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Center for Advanced Study
in the Behavioral Sciences
- Ralph Berglund**
Data Communications Consultant
- Howard Cravis**
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President, Network Analysis Corp.
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- Murray Robinson**
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- Bernard Strassburg**
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FCC Common Carrier Bureau
- Einar Stefferud**
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The INTERFACE '77 Industry Editors Advisory Board is composed of leading editors of data communications, data processing, communications, and business publications. They've provided valuable program guidance and counsel from the perspective of the industry press.

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DataComm School/Basics

A full curriculum covering fundamentals of data communications, from basic network design to cost justification, plus the "how-to" of sending, receiving and handling data will emphasize alternative approaches. Datacomm professionals Richard Kuehn, Murray Robinson, James Wood, and Bruce Armour offer comprehensive tutorial with ample opportunity for questions and answers. The curriculum is broken into four parts briefly described below.

(DS-1) Fundamentals for Managers - Getting started in data communications, or just updating yourself should be a rewarding experience for attendees in the first class of the Datacomm School. At the opening bell, fundamentals of communicating data will span basic single-line transmission principles to network operations payback. A management or cost-effective point of view will be taken with emphasis on alternative approaches. Attendees should find the direction they need to begin making decisions.

(DS-2) Communications Services and Interfaces - The complex world of transmission services and interface equipment is to be simplified and reduced to understandable terms and dimensions in the School's second class. Important characteristics of the latest service offerings of the common, specialized and value-added carriers will be discussed. Attendees will become educated on the cost-benefit differentials for each type of service.

A route through the maze of interface equipment required to link systems to services is described as the class proceeds. Various types of couplers, modems and multiplexers and their operating features are explained with cost-effective applications in mind.

Richard A. Kuehn (Speaker, DS-1), Founder and President of RAK Associates, Cleveland, OH. Mr. Kuehn has helped numbers of firms and organizations create their own communication departments. He has given testimony in regulatory matters affecting telephone rates and services, and spoken on the subject of control and communications costs for the American and Canadian Management Associations.

Murray H. Robinson (Speaker, DS-2), President of Murray H. Robinson and Associates, Ltd., Ottawa, Canada. Mr. Robinson's organization specializes in management planning, system design, and procurement studies for large-scale data and computer communications networks for industry, government, and the military. He has held various management positions with the Trans-Canada Telephone System and has lectured frequently for AMA and AMR.

(DS-3) Communications Processors and Software - Descriptions of communications processors including hosts, front-ends, concentrators, etc., and their software counterparts will cover the blackboards during the third class of Datacomm School I. What processors are available and most productive for what purposes will be discussed in relation to software elements driving them.

Special attention is given to alternative approaches of distributing processing power throughout various types of data communications networks. Cost-saving criteria will be provided for analyzing supplier offerings in the processor and communications software areas.

(DS-4) Terminals and Terminal Systems - A fitting close to DataComm School-1 educates attendees to the world of terminals and terminal systems. Among the important and most costly elements of a data communications system, terminals often provide the keys to improved productivity in an operation. Configurations from touchtone phone to complete remote systems will be discussed as well as the hidden considerations for vendor support and service.

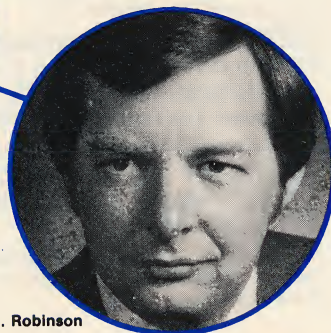
The wide variety of terminal and remote system types will be studied with attention to fundamental operation and cost trade-offs available in taking alternative approaches. Attendees should receive a solid foundation in making initial decisions as to which approach should fit their needs best.

James A. Wood, II (Speaker, DS-3), Senior Associate, Richard L. Deal & Assoc. Inc., Fairfax, VA. Communication network evaluation, design and modernization efforts are Mr. Wood's present responsibilities, as well as the design development of the Network Design System, a comprehensive library of computer models and programs for designing and optimizing networks and communications systems. His previous assignments include evaluation of communication processors and software at Informatics, Western Union, and the Air Force.

Bruce Armour (Speaker, DS-4), Communications Systems Analyst, University of Southern California, Los Angeles, CA. For the last seven years, Mr. Armour has been responsible for evaluation, selection and system integration of data communications hardware, especially terminals, and software for the University Computing Center. Previously he spent five years with IBM's Federal Systems Division working on various data communication projects.



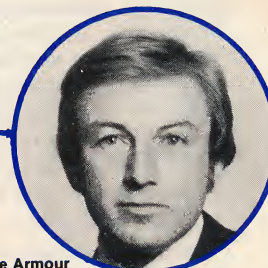
Richard A. Kuehn



Murray H. Robinson



James A. Wood



Bruce Armour

DataComm School/Applications

Professionals from 15 applications disciplines covering all major commercial, industrial and public service sectors are to discuss the use of data communications by industry. Panels of experienced users and consultants will discuss relevant data communications approaches. Speakers will represent different sizes or types of operations to bring out the full range of techniques and tools available for each application area.

Presentations often take the "case study" approach, where the operational problem or opportunity to be handled by data communications, the objectives set and planning required, implementation stages, equipment selection process, and on-going results are measured against objectives.

(DS-A1) Banking - Often leading in the application of information systems, commercial banks plus trust and savings and loan institutions continue to establish frontiers in using data communications. Beyond the basic linking of branch office operations to central facilities, banks are emphasizing those applications directly affecting operations and profitability. Attendees will learn of the practical approaches to customer inquiry handling, teller transactions, EFTS, and bank card operations.

(DS-A2) Insurance - Insurance data handling systems have led many organizations to data communications. Benefits in time, cost, and manpower savings through data communications have led operations to new methods for policy payments, claims processing, policy status inquiries, etc., on regional and branch office levels. What equipment and services are often applied in national and regional networks will help attendees evaluate more cost-effective measures.

(DS-A3) Securities - Information flow so critical to successful operations in the securities field is increasingly dependent on data communications. The major quotation systems and real-time transaction approaches will be discussed. Significant insights will be directed at more efficient control and branch office administration of on-going cash and accounting transfers and customer services.

Gabriel A. Gagliano (Chairman, DS-A1), Vice President Operations of Bessemer Trust Company. For the past 18 years Mr. Gagliano has been directing data processing for the Bessemer group of companies which utilizes a telecommunication link-up for data collection and inquiry with minicomputers communicating to a central host. He also is the controller of Bessemer Securities Corporation.

(DS-A4) Business Services - Data communications plays an expanding role in the business and professional services of many accountants, doctors, lawyers, etc., both the supplier and user of such services apply the productivity of data communications for better payoff through more efficient and comprehensive operations. Speakers will represent interesting time-sharing and data handling approaches that optimize data communications for business services.

(DS-A5) Service Industries - As you reserve a room or a seat on a plane, rent a car, authorize credit, etc., you're probably doing it via a data communications system. Just how some leading service operations make maximum use of data communications offers attendees some new ideas for implementation. Emphasis will be given to the range of equipment and systems applied in service operations.

(DS-A6) Wholesaling - The ability to "deliver" marks the successful wholesaling and distribution operation in applying data communications for such tasks as inventory control, goods distribution, warehouse networking, customer inquiries, and order processing. Descriptions of equipment systems and services being applied at leading wholesalers and distributors will assist attendees in making their operations more productive.

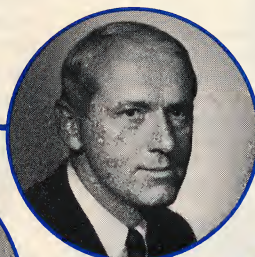
Richard P. Shaffer (Chairman, DS-A8), Vice President, Gambit Management Strategies, Inc., New York, NY. Gambit Management Strategies is an independent consulting firm devoted to the data processing needs of the retail industry. Previously Mr. Shaffer was with Associated Merchandising Corporation as Management Information Director. He has had broad systems and management experience with IBM.



Gabriel A. Gagliano



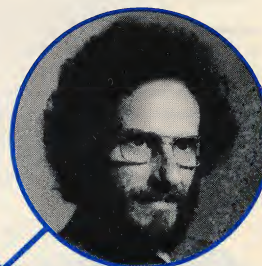
D.J. Tleszen



Neil A. Swift



Dr. Joel N. Orr



Richard P. Shaffer

DataComm School/Applications

(DS-A7) Transportation - People and products are being transported more efficiently through broad application of data communications. Data communications cuts through the logistical paperwork encumbering all forms of transportation. Speakers from major transportation disciplines will present approaches toward maximizing operations in critical areas such as reservations, vehicle inventory and cargo distribution.

(DS-A8) Retailing - Data communications plays an expanding role with today's retailers in critical areas such as inventory ordering and control, distributed warehousing, fleet management, multi-store financial management, credit authorization and overall paperwork reduction. Speakers will update attendees on successful approaches being implemented by leading retailers. Recent events in the transaction processing and POS areas will illustrate how data communications products and services can offer improved efficiencies in such systems.

(DS-A9) Manufacturing - Manufacturing operations including distributed inventory control, multi-location order entry, on-line production scheduling and control, satellite warehouse operation, cash flow management, etc., have been streamlined through data communications use. Different approaches to integrating critical manufacturing elements through data communications will offer attendees new perspectives to apply in their operations.

(DS-A10) Process Industries - Process manufacturing operations see data communications as the means of more cost-effective resource application. From data collection to distributed networking, data communications is adding a measure of online control to the process itself as well as the logistical and administrative systems of the organizations performing the process.

Donald D. Johnson (Chairman, DS-A12), Director OBTS, New York Division of Criminal Justice Services for Information and Identification and Statistics. As a speaker on data communications applications in Law Enforcement, Mr. Johnson has excellent credentials. He was also Director of the N.Y. Offender Based Transaction Statistics Program. When Mr. Johnson was with Western Union, he was Director of Communication Industry Sales. He was also the President of a Communication Leasing Company.

James R. Jenkins (Chairman, DS-A15), Senior Program Manager, Office of Telecommunications Policy Executive Office of the President. Mr. Jenkins is responsible for the telecommunication standards program within the Executive Branch with emphasis placed on the development of standards oriented on the emerging all-digital technology and for the government communications planning program. He taught undergraduate students as an Assistant Professor of Computer Science, in computer programming, assembly language and FORTRAN.

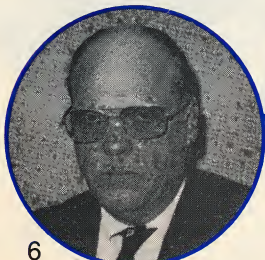
(DS-A11) Power Utilities - Major utilities providing today's conveniences depend more on data communications productivity. Customer services and accounting rank high in applications interest, but increasingly users are turning to network approaches for multiplant administration, reducing paperwork and improving cost control. Speakers from major power utilities will offer attendees proven approaches for consideration.

(DS-A12) Law Enforcement - Federal, state and local law enforcement agencies rely heavily on data communications for many diverse applications. Systems for on-line access to criminal histories on various data bases up to the federal level are establishing a nationwide computer-based command control facility. The techniques and tools available to law enforcers at different levels of application will be discussed.

(DS-A13) Education - Tones of knowledge have been made more accessible to millions through the facility of data communications. The results are felt in better research and computer science capabilities at the university level, more effective computer learning approaches and administration at the junior college and secondary levels, and growing computer literacy at the grade school level. Cost-effectiveness in applying data communications will be emphasized by speakers who will discuss their approaches for various educational systems.

(DS-A14) Health Care - Keeping this nation healthy involves data communications for applications such as medical research, on-line patient services, lab analyses, and distributed facilities networking. Attendees will benefit from first-hand experiences of those who have applied data communications to solve some of the more challenging requirements for health care.

(DS-A15) Government - Government operations have seen improvements resulting from data communication applications at Federal, State and Municipal levels. In areas of research, administration, records maintenance, etc., data communications networks add a measure of cost-effectiveness. Speakers will address more interesting applications of data communications for improving functional productivity in government.

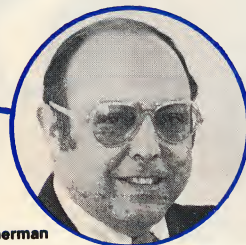


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Donald C. Johnson



Dr. Leonard Kleinrock



Elton Sherman



James R. Jenkins

An assemblage of top data communications consultants will join in disclosing the secrets of network optimization. Spanning two days, the Networking Workshop sessions build on one another to provide important decision-making criteria for attendees with some computer and communications experience.

(NW-1) Network Planning - Howard Frank and Dixon Doll start off with full tutorial exposure including guidance on setting objectives for implementing data communications networks. Alternative approaches to network productivity, cost-justification and budgeting plus requirements for costing and staffing will be discussed to provide a complete picture of network planning.

(NW-2) Network Design Optimization - Ralph Berglund and Richard Deal will put their thoughts together to offer considerations for network optimization that stresses cost-effective design. Alternative tools and what to look for in a supplier of those tools will be discussed in detail. Considerations for net loading and simulation will be addressed as well as the fine-tuning and support to keep the system running optimally.

Dr. Howard Frank (Speaker, NW-1), President of Network Analysis Corporation, Glen Cove, N.Y. The author of more than 80 technical papers on network analysis and co-author of the book, "Communication, Transmission and Transportation Networks," Dr. Frank is responsible for the management of NAC activities in network design, operations research and management consulting. As a full-time consultant to the Office of Emergency Preparedness, Dr. Frank was the technical director of a group of consultants and OEP employees conducting studies of network survivability and network design.

Dr. Dixon Doll (Speaker, NW-1), President of DMW Telecommunications Corp., Ann Arbor, MI. Dr. Doll's organization specializes in planning, analysis, and design of large end user and common carrier data communication networks. He is a visiting faculty member of the IBM Systems and Research Institute. As a consultant, Dr. Doll has helped develop programs for computer-network optimization. He is a noted lecturer and an accomplished writer in the field.

Ralph G. Berglund (Speaker, NW-2), Independent Consultant, Cherry Hill, NJ. Mr. Berglund has been a management and technical consultant in data communications for ten of his eighteen years in the industry. His areas of special emphasis include the analysis, design and evaluation of network system alternatives, as well as provision of computer program to aid in these functions. He is a frequent speaker at industry meetings and seminars and is data communications advisor to the American Management Association, Auerbach Corporation, and Datapro Research. His other client experience includes a broad array of industrial, financial, and government entities.

(NW-3) Network Operating Systems and Remote Software Neil Sullivan heads this direction-finding session covering software elements and approaches essential to successful network applications. Emphasis will be placed on host-resident and remote site software and their interrelationships.

(NW-4) Network Operations Productivity - Ken Brantley leads off the Networking Workshops by emphasizing the need and way to achieve top performance in network operations. Approaches toward establishing operations accountability and network control will be addressed plus considerations for managing the continuity and expansion of network activities.

Richard L. Deal (Speaker, NW-2), President of Richard L. Deal and Associates, Inc., Fairfax, VA. Mr. Deal's organization specializes in management planning, system design and procurement studies for large-scale data communications networks. Prior to forming Richard L. Deal and Associates, Inc., for military civilian government and industry clients, he held positions with leading companies such as the Mitre Corporation and Systems Development Corporation. He lectures frequently at data communications meetings and seminars, including the AMA symposia on distributed systems.

Neil C. Sullivan (Speaker, NW-3), Technical Staff, TYMNET, Inc., Cupertino CA. During his eleven years with Tymshare, parent of TYMNET, Mr. Sullivan has been made the Manager Field Support, Engineering Software and Market Information and Communications. Before joining Tymshare, he was an analyst for Control Data Corporation involved in the design and development of message switching software and systems.

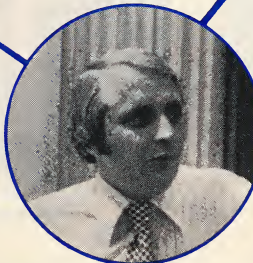
Kenneth Brantley (Speaker, NW-4), Director of Advanced Product Development, COMTEN Corp., St. Paul, MN. For fifteen years Mr. Brantley has been involved with measuring and improving data communications productivity. His major efforts are presently directed in planning and design of performance measuring hardware and software systems at COMTEN. He has worked extensively on communications network design and performance measurement for Martin Marietta in both their Data Systems and Aerospace Divisions.



Dr. Howard Frank



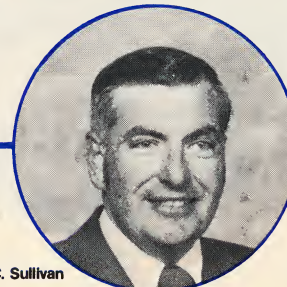
Dr. Dixon Doll



Richard L. Deal



Ralph G. Berglund



Neil C. Sullivan

Product Updates

Product proliferation in the fast-moving data communications world taxes most users. The conference offers a way to clear up confusion by having leading experts focus on the latest product technology and delivering that information in meaningful terms while weighing alternatives according to applications needs.

(PU-1) Hosts, Front-Ends and Communications Processors - The harmony among computing elements in a data communications network is key to system's efficiency. Network processing elements often include hosts, local and remote front-ends, specialized or general-purpose processors. Attendees will be updated on the more important advances in processor application for data communications. Cost and capability trade-offs in distributing processing power to meet requirements in the latest network architectures will be emphasized.

(PU-2) Data Base and Communications Software - Data communications approaches are perhaps the most demanding in their software needs. Sophistication in planning and design for data base/data communications systems places an increasing burden on user staffs. Discussion of proven approaches plus available communications software tools and data base structures will provide attendees the latest insights for more cost-effective systems.

Allan D. Bobko (Chairman, PU-1), Manager of Corporate Data Communications Services and Planning, PPG Industries, Inc., Pittsburgh, PA. Mr. Bobko is responsible for the satisfactory operation and future planning of all data communication facilities used in accessing PPG's corporate computer center. He is currently involved in projects such as front end evaluation, installation of a technical control facility, and communication security.

Neil Stratton (Chairman, PU-2), Programming Manager, Sterling Computer Systems, Dallas, TX. He was Facilities Manager during the development of Sterlink on-line real-time inventory management systems for industrial distributors using data base and data communication software and remote 3270 terminals.

(PU-3) Switching Systems - Increasingly important to users are the local and remote switching systems that monitor, receive, store and forward messages. As hardware/software sophistication improves, more efficiency in a switch enhances its function. Discussions will center on latest advancements in switching approaches for data and hybrid data/voice applications including computerized PABX.

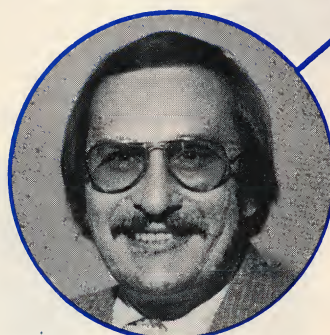
(PU-4) Diagnostic Testing and Technical Control - Much has been done to reduce the downtime of systems and improve the quality of services for data communications. The "tech control" center has become a new approach to improving productivity. This first of a group of sessions on tech control will introduce the attendee to reasons for and ways of implementing testing and technical control procedures and techniques.

Dr. John S. Edwards (Chairman, PU-3), President, Digital Switch Corp. in McLean VA. Leading his own consulting company in research and design of digital switching systems, Dr. Edwards brings a comprehensive background to this session. With over 15 years in data communications efforts, he has assisted in both data and voice switch system developments at DATRAN, Bell Northern Research and Bell Labs.

Ronald Sander (Chairman, PU-4), Senior Computer Specialist, U.S. Senate, Washington, DC. Mr. Sander has been involved in the hardware and software of on-line data communication systems as an engineer, product manager, technical marketing specialist, independent consultant and user. He has held technical management positions at NASA, Sanders Data Systems, ARINC and COMTEN.



Allan D. Bobko



Neil Stratton



Ronald Sander

(PU-5) Modems, Multiplexers, and Network Processors - Successful computer communication links hinge partly on one's ability to choose and apply interfacing equipment such as modems, multiplexers, and network processors. In highlighting the ever-expanding variety of equipment dictated by device characteristics and line speeds, speakers will help attendees cultivate strategies to optimize the purchase decision. Those more interesting technological advances will be highlighted.

(PU-6) CRT's and Teleprinters - Everchanging CRT and teleprinter technology offers both solutions and problems to data communications decision makers. Costs multiply quickly, so evaluations and purchases are on-going to insure efficient operation. Attendees will get up-to-the-minute perspectives of the most significant technological advances. Important approaches for matching terminals to user requirements will be highlighted.

Dr. Patrick McGregor (Chairman, PU-5), Director of Washington Operations, Network Analysis Corp. Currently involved in a major data communications study for the Department of Agriculture, Dr. McGregor has supervised and participated in projects ranging from feasibility analysis of communication interface and processor systems to development of network architectures. His experience covers a broad range of data communications assignments.

Arthur F. Lynch (Chairman, PU-6), Product Manager for Data Communications, Data General Corporation, Southboro, MA. Since 1973, Mr. Lynch has been responsible for data communications and terminal systems. His previous work experience at Honeywell Information Systems included design and implementation of remote message concentrator systems, 360/370 front-end processors, remote intelligent terminal systems and message switching systems.

(PU-7) Remote Data, Job and Batch Entry - Remote-site applications include simple to complex data entry, remote job and batch job entry. New product entries, system and service approaches will be highlighted in the context of their cost-effectiveness in meeting user needs. Attendees will get a fresh view of the emerging use of micros and minis driving remote terminals.

(PU-8) Distributed Computing Systems - Another major trend in the application of computers in communications, distributed computing is returning computing power to the end user. Vast nets are being planned and entire concepts redesigned to answer end user needs with the correct system solution. Attendees will gain insight to the major approaches being taken and the more advanced hardware/software tools leading this thrust.

Ms. Shirley Prutch (Chairwoman, PU-7), Data Center Manager, Martin Marietta, Denver, CO. A past Director of Advance Systems. Ms. Prutch planned and consolidated remote job entry into the Orlando Data Center. She has been Director of Computer Services for King Resources. Ms. Prutch was also Vice President at Computer Sharing Services and past President of Share Incorporated.

Richard L. Deal (Chairman, PU-8), President of Richard L Deal and Associates, Inc., Fairfax, VA. Mr. Deal's organization specializes in management planning, system design and procurement studies for large-scale data communications networks. Prior to forming Richard L. Deal and Associates, Inc., for military civilian government and industry clients, he held positions with leading companies such as the Mitre Corporation and Systems Development Corporation. He lectures frequently at data communications meetings and seminars, including the AMA symposia on distributed systems.



Shirley Prutch



Arthur F. Lynch



Dr. Patrick McGregor



Richard L. Deal

Service Updates

How data gets to and from anywhere has never been more efficient. Yet, today's buyer of services is confronted with a plethora of alternatives. New routing and traffic concepts, efficiencies based on data formatting, cost-volume trade-offs, value-added benefits, etc., all mean more study for more cost-effective use. A series of six updates in the major service areas of importance will aid users in their search for optimum productivity.

(SU-1) Low-Speed Transmission Services - Flexibility in approaches offered leads to optimization for the data communications user. Low-speed services such as TWX, TELEX, and even Mailgram can provide cost-effective solutions for a variety of communication tasks. Low rate and service features will bring users up-to-date on these cost-effective transmission alternatives.

(SU-2) Bell Services - An aggressive posture to meet the varying needs of data communication users has led to several new services from the Bell System. WATS, DataPhone, and DDS will be discussed as well as DSDS and MPL. Emphasis will be given to choosing more cost-effective alternatives according to application needs.

(SU-3) Independent Microwave & Specialized Carriers Transmission service offerings are constantly changing in the users favor. New services being provided and others being planned suggest alternatives for the knowledgeable buyer. Considerations for evaluating and using major independent services will be highlighted.

Joseph T. Massey, Jr. (Chairman, SU 1), President JTM Associates telecommunications consulting firm, Atlanta, GA. For seven years. Mr. Massey has been involved in telecommunications systems design, setting up data networks for general users and hospitals. He has taught AMA's Basic Telecommunications Course and his analysis has been extensively published. In the past he had been a consultant for the Bell System.

Anthony T. Easton (Chairman, SU-2), Communications Consultant, International Communications Management, San Francisco, CA. Terry Easton is an established international lecturer and management consultant in the field of management information systems, computer science, and telecommunications. He has been project manager for several major global communication systems at ICM. He has also created and conducted numerous seminars, workshops, and courses in computers and communications for many groups, including CDC's Institute of Advanced Technology, and AMR, as well as private firms and government agencies.

(SU-4) International Carriers - More and more users are incurring global responsibilities for data communications. Which carriers and services to choose requires an up-to-date appraisal of cost and route alternatives. Complications can result from international code and regulation differences as well. More important issues will be highlighted to optimize the decision-making process.

(SU-5) Packet Switched Carriers - Packet switched carriers such as TELENET and TYMNET offer users still more avenues for data communications traffic. The latest advances and offerings of the packet switchers may result in a new alternative for many users. Emphasis will be given to evaluation of each carrier and considerations for using their services.

(SU-6) Value-Added Services - The concept of value-added service seems to know no bounds as general and special-purpose time-shared services provide computer and communications power to users. Many users with dedicated applications can gain more mileage from the value-added service. Which major services are available and how to apply them cost effectively will be emphasized.

Minor Huffman, Jr. (Chairman, SU-3), Executive Vice President Center for Communication Management, Inc., CCMI, Ramsey, NJ. At CCMI, Mr. Huffman directs the company's client research activities and is Editor-in-Chief for its numerous publications. Prior to joining CCMI, Mr. Huffman was President and co-founder of Data Network International, a telecommunication consulting organization specializing in the design and management of large user networks. His 18 years in the telecommunications industry included managerial positions with GT&E, Western Union, ITT WORLDCOM, and Digitronics Corp. He combines a unique balance of practical knowledge in engineering, marketing, and product planning.

Leonard Effenbein (Chairman, SU-4), President of Telecom Systems Group, Montclair, NJ. As a telecommunications consultant specializing in international systems and networks, Mr. Effenbein has had fifteen years of experience in data processing and communications. He is the publisher of the World Telecommunications Directory. He has held executive positions at Atlantic-Bridge Corporation, Wellington Computer Systems, and Computer Application, Inc. He has lectured and published extensively on international data communications.

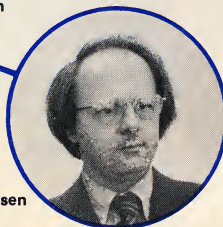
Mr. David Friesen (Chairman, SU-6), Vice President, First Data Corp., Waltham, MA. Mr. Friesen was a founder of First Data Corporation in 1970 and currently serves as a Director of the company. His primary responsibility at First Data is for the overall technical effort of the service company, including system development, operations and data communications. Previously, Mr. Friesen worked for several years at the MIT Laboratory for Nuclear Science in the field of computerized film scanning and pattern recognition.



Anthony T. Easton



Len Effenbein



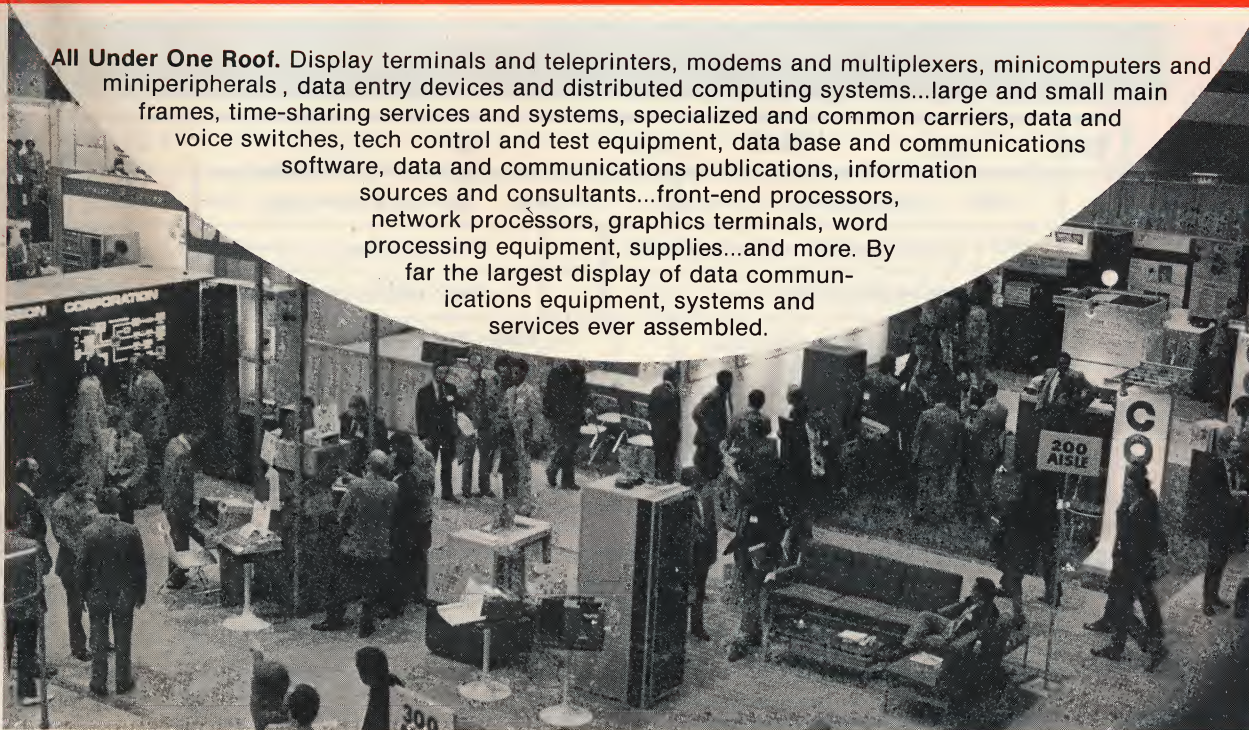
David Friesen



Minor Huffman, Jr.

100's of Exhibits

All Under One Roof. Display terminals and teleprinters, modems and multiplexers, minicomputers and miniperipherals, data entry devices and distributed computing systems...large and small main frames, time-sharing services and systems, specialized and common carriers, data and voice switches, tech control and test equipment, data base and communications software, data and communications publications, information sources and consultants...front-end processors, network processors, graphics terminals, word processing equipment, supplies...and more. By far the largest display of data communications equipment, systems and services ever assembled.



YOU'LL SEE THESE EXHIBITORS...AND MORE...AT INTERFACE '77

ACTION COMMUNICATIONS SYSTEMS, INC.	EXTEL CORP.	NORFIELD ELECTRONICS, INC.
ADC TELECOMMUNICATIONS	FROST & SULLIVAN, INC.	PER-SCI, INC.
AMERICAN TELEPHONE & TELEGRAPH COMPANY (AT&T)	GANDOLF DATA, INC.	PRENTICE ELECTRONICS
APPLIED DIGITAL DATA SYSTEMS (ADDS)	GENERAL AUTOMATION	PULSECOM, INC.
ATLANTIC RESEARCH CORP.	GENERAL DATACOM INDUSTRIES, INC.	QUALTERM TERMINALS/
AUERBACH PUBLISHERS, INC.	GENERAL ELECTRIC DATA	DIVISION OF DATA EQUIPMENT, INC.
BEEHIVE INTERNATIONAL	COMMUNICATIONS PRODUCT DEPT.	RANDAL DATA SYSTEMS
BUNKER-RAMO CORP.	GENESIS ONE COMPUTER CORP.	RAPIFAX, INC.
BURROUGHS CORP.	GRAPHIC CONTROLS CORP.	RAYTHEON DATA SYSTEMS
CABLE & WIRELESS, INC.	HAZELTINE CORP.	RCA AMERICAN COMMUNICATIONS, INC.
CADO SYSTEMS, INC.	HUGHES AIRCRAFT - INDUSTRIAL PRODUCTS DIVISION	RCA GLOBAL COMMUNICATIONS, INC.
CENTRONICS DATA COMPUTER CORP.	IBM (INTERNATIONAL BUSINESS MACHINES)	RCA SERVICES COMPANY
CODEX CORP.	ICC/MILGO	RESEARCH, INC.
COGAR CORP.	INCOTERM CORP.	RUSCO ELECTRONIC SYSTEMS
COLLIMATION CORP.	INDEPENDENT DATA COMMUNICATIONS	SCOPE DATA, INC.
COLLINS RADIO GROUP	MANUFACTURERS ASSOCIATION (IDCMA)	SIGNATURE TECHNOLOGY, INC.
COMDATA CORP.	INFOREX, INC.	SOLA ELECTRIC
COMMUNICATIONS NEWS	INFORMATION PROCESSING, INC.	SOUTHERN PACIFIC COMMUNICATIONS CORP.
COMMUNICATIONS SATELLITE CORP. (COMSAT)	INFORMER, INC.	SPECTRON CORP.
COMPUTEK	INFOSYSTEMS MAGAZINE	SPERRY UNIVAC
COMPUTER COMMUNICATIONS, INC.	INFOTON, INC.	SPHERE CORP.
COMPUTER DECISIONS	INFOTRON SYSTEMS CORP.	SYCOR, INC.
COMPUTER DIMENSIONS, INC.	INTELLIGENT SYSTEMS COMPANY	SYKES DATATRONICS
COMPUTER PERIPHERAL CORP.	INTERNATIONAL COMPUTER PRODUCTS	T-BAR, INC.
COMPUTER ROOMERS, INC.	INTERNATIONAL TELEPROCESSING SYSTEMS	TANDEM COMPUTERS
COMTEN, INC.	INTERTEC DATA SYSTEMS CORP.	TDX SYSTEMS, INC.
CONSOLIDATED COMPUTER, INC.	INTERTEL, INC.	TEKTRONIX, INC.
CONTROL DATA CORP.	ITT BUSINESS SYSTEMS	TELECOMMUNICATIONS MAGAZINE
COOKE ENGINEERING COMPANY	ITT DOMESTIC TRANSMISSION	TELEDYNAMICS (DIVISION OF AMBAC INDUSTRIES, INC.)
DATA CHANNELS	ITT WORLD COMMUNICATIONS, INC.	TELEFILE COMPUTER PRODUCTS, INC.
DATA COMMUNICATIONS MAGAZINE	KEY TRONIC CORP.	TELENET COMMUNICATIONS CORP.
DATA GENERAL CORP.	LEAR-SIEGLER, INC.	TELETYPE CORP.
DATAMATION	MCI TELECOMMUNICATIONS CORP.	TERMIFLEX CORP.
DATAMEDIA CORP.	MEGADATA COMPUTER & COMMUNICATIONS CORP.	TESDATA SYSTEMS CORP.
DATAPoint CORP.	MEMOREX CORP.	TEXAS INSTRUMENTS
DATAPRO RESEARCH CORP.	MFE CORP.	3M COMPANY - INFO MANAGEMENT DEPT.
DELTA DATA SYSTEMS CORP.	MI ² CORP.	3M COMPANY - NUCLEAR PRODUCTS DIV.
DI/AN CONTROLS, INC.	MINICOMPUTER NEWS	TIMEPLEX
DIGILOG SYSTEMS, INC.	MINI-COMPUTER SYSTEMS, INC.	TRENDATA CORP.
DIGITAL COMMUNICATIONS ASSOCIATES, INC.	MINI-MICRO SYSTEMS, INC.	TRI-DATA CORP.
DIGITAL COMMUNICATIONS CORP.	MITRON SYSTEMS CORP.	TYMNET COMMUNICATIONS
DIGITECH DATA INDUSTRIES, INC.	MODEMS PLUS	UNIVERSAL DATA SYSTEMS, INC.
DMW TELECOMMUNICATIONS	MOHAWK DATA SCIENCES	VADIC CORP.
E-SYSTEMS, INC.	MSI DATA CORP.	WANG LABORATORIES
EDUCATIONAL DATA SYSTEMS, INC.	NCR (NATIONAL CASH REGISTER)	WESTERN UNION DATA SERVICES COMPANY
ENTREX, INC.	NETWORK ANALYSIS CORP.	WESTERN UNION INFORMATION SYSTEMS
	NIXDORF COMPUTER CORP.	WESTERN UNION INTERNATIONAL, INC.
		ZETA RESEARCH, INC.

SUNDAY EVENING, KEYNOTE

BELL BILL DEBATE (BBD-1) "EFFECTS ON THE CONSUMER OF COMPETITION IN COMMUNICATIONS"

	9:00	10:00	11:00	12:00	1:00
MONDAY	DS-1 Fundamentals	DS-2 Services & Interfaces			
	PU-1 Hosts/Front Ends/Comm. Proc.	PU-2 Data Base & Comm. Soft.			
	PU-5 Modems/MUX's/Net.	PU-6 CRT's and Teleprinters			
	SU-1 Low-Speed Trans. Svcs.	SU-2 Bell Services			
	NW-1 Net. Planning	NW-2 Net. Design Optimization			
	TW-1 Communications Theory	TW-2 Advanced Message Switching			
	HS-1 Graphic Terminals	HS-2 Int'l. Standard X25			
TUESDAY	AW-1A Electronic Mail	AW-1B Electronic Mail			
	Bell Bill Debates BBD-2 Transmission Services Starts at 8:30 a.m.	DS-A1, DS-A2, DS-A3 DS-A4, DS-A5,			
		SU-5 Packet Switched Services			
		AW-2 Datacomm in a Comm. Utility			
		HS-5 Privacy and Security			
		HS-6 Word processing Nets			
		HS-7 Protocol Transparency			
		MW-1 Planning and Forecasting			
	Bell Bill Debates BBD-3 Interconnect Issues Starts at 8:30 a.m.	PU-1(R) Hosts/Front Ends/Comm. Proc.			
		NW-1(R) Network Planning			
		MW-3 Hiring and Training Datacomm Pers.			
		PU-5(R) Modems/MUX's/Net. Proc.			
		PU-6(R) CRT's and Teleprinters			
		HS-10 Users Vend Excess Capacities			
		BBD-4 FCC Effectiveness			
WEDNESDAY					

BELL BILL DEBATES
 BBD-1 Effects on the Consumer of Competition in Communications
 BBD-2 Pro's and Con's of Competition in Transmission Service
 BBD-3 Considerations for Interconnect Competition
 BBD-4 Views on FCC Effectiveness
 BBD-5 Present & Future Implications of SBS
 BBD-6 How Users Can Impact on Communications Legislation
DATA COMM SCHOOL BASICS
 DS-1 Fundamentals
 DS-2 Services and Interfaces
 DS-3 Communications Processors and Software
 DS-4 Terminals and Terminal Systems
DATA COMM SCHOOL APPLICATIONS
 DS-A1 Banking
 DS-A2 Insurance
 DS-A3 Securities
 DS-A4 Business Services

DS-A5 Wholesaling
 DS-A6 Transportation
 DS-A7 Service Industries
 DS-A8 Retailing
 DS-A9 Manufacturing
 DS-A10 Process Industries
 DS-A11 Utilities
 DS-A12 Law Enforcement
 DS-A13 Education
 DS-A14 Health Care
 DS-A15 Government
NET WORKSHOPS
 NW-1 Network Planning
 NW-2 Network Design Optimization
 NW-3 Network Operating Systems and Remote Software
 NW-4 Network Operations Productivity
PRODUCT UPDATES
 PU-1 Hosts/Front Ends and Communications Processors
 PU-2 Data Base and Communications Software

PU-3 Switching Systems
 PU-4 Diagnostic Testing and
 PU-5 Modems, Multiplexers, Processors
 PU-6 CRT's and Teleprinters
 PU-7 Remote Data, Job and B
 PU-8 Distributed Computing &
SERVICE UPDATES
 SU-1 Low-Speed Services, TELEX, Mailgram, Facsimile
 SU-2 Bell Services, Includ WATS, DSDS, DDS
 SU-3 Independent Microwav Carriers
 SU-4 International Carriers
 SU-5 Packet Switched Carrier
 SU-6 Value Added Services
APPLICATIONS WORKS
 AW-1A,B Electronic Mail
 AW-2A,B Datacomm in a Commur
 AW-3A,B Time-Shared Services ar

Schedule

COMMUNICATIONS

2:00	3:00	4:00	5:00
DS-3 Comm. Proc. & Soft	DS-4 Terminals & Term. Sys.		
PU-3 Switching Systems	PU-4 Diag. Test. & Tech. Control		
PU-7 Remote Data, Job & Batch Entry	PU-8 Distributed Computing Sys.		
SU-3 Indep. Microwave & Spec. Carr.	SU-4 Int'l. Carriers		
NW-3 Net. Op. Sys. & Remote Soft.	NW-4 Net. Ops. Productivity		
TW-3 High-Speed Communications	TW-4 Developing Transmission Concepts		
HS-3 Teleconferencing	HS-4 Microprocessor Payoffs		
EXHIBITS OPEN 10:30 - 5:30			
DS-A6, DS-A7, DS-A8, DS-A9, DS-A10	DS-A11, DS-A12, DS-A13, DS-A14, DS-A15		
SU-2(R) Bell Services	SU-6 Value Added Services		
AW-3A Time-shared Services & Systems	AW-3B Time-Shared Services & Sys. Entry		
AW-4A EFTS	AW-4B EFTS		
TW-5 Tech. Control	TW-6 Tech. Control		
HS-8 CATV	HS-9 Facsimile Sys. & Services		
SU-3(R) Indep. Microwave & Spec. Carr.	MW-2 Organizing Data and Comm.		
EXHIBITS OPEN 10:30 - 5:30			
PU-2(R) Data Base & Comm. Soft.	PU-3(R) Switching Systems		
NW-2(R) Net. Design Optimization	PU-7(R) Remote Data, Job, Batch Ent.		
MW-4 Contractual Considerations	NW-4(R) Net. Oper. Productivity		
AW-5A Point of Transaction Systems	AW-5B Point of Trans. Systems		
AW-6A Distributed Computing	AW-6B Distributed Computing		
NW-3(R) Net. Op. Sys. & Soft.	TW-7 Net. Simulation Tech.		
BBD-5 SBS Perspectives	BBD-6 User Impact on Data Comm.		
EXHIBITS OPEN 10:30 - 5:00			

Technical Control
and Network

Batch Entry
Systems

Including TWX,
Teletype,
DataPhone,
and Special

HOPS

Communications Utility
and Systems

AW-4A,B EFTS
AW-5A,B Point-of-Transaction Systems
AW-6A,B Distributed Computing Systems
MANAGEMENT WORKSHOPS
MW-1 Planning, Forecasting, and Proposing
Datacomm Needs.
MW-2 Organizing Data and Communications
Functions
MW-3 Hiring and Training Datacomm Personnel
MW-4 Contractual Considerations for Datacomm
Purchasing
HIGHLIGHT SESSIONS:
PRODUCT TRENDS
HS-1 Graphics Draws New Boundaries with
Datacomm
HS-2 Living with the X.25 International Standard
HS-3 Teleconferencing a Datacomm Time-Saver
HS-4 Micros Present New Datacomm Payoffs
HS-5 Privacy and Security Costs Alarming
HS-6 Word Processing Nets See Writing on the
Wall

HS-7 Creating Protocol Transparency Offers
Alternatives
HS-8 CATV Cost-Effective Datacomm Carrier
HS-9 Facsimile Systems and Services
Supplement Datacomm Diet
HS-10 User Approaches to Vending Excess
Capacities
TECHNOLOGY WORKSHOPS
TW-1 Communications Theory
TW-2 Advanced Message - Switching Theory
TW-3 Engineered Economics for High-Speed
Communications
TW-4 Developing Transmission Concepts...
CATV, Laser, Digitized Voice
TW-5 Technical Control I - Fault Isolation and
Recovery
TW-6 Technical Control II - Network
Management
TW-7 Network Simulation Techniques

Application Workshops

Data communications continues to cause major new application redirections. Extensive product and policy issues for some of these applications require greater involvement and knowledge from pioneering decision-makers. Some of these more important applications will be treated comprehensively in 3-hour workshops.

(AW-1) Electronic Mail - Whether or not electronic mail has officially arrived, many are investigating the possibilities. Some systems are up and running though policy issues are not completely defined. A look at where we've been, where we're at and where we're heading will assist attendees in their planning. The practical experience of leaders in electronic mail, message systems, teleconferencing, etc., will be shared with attendees.

(AW-2) Data Communications in a Communications Utility Perhaps the most sophisticated data communications systems exist at the communications utilities providing transmission services. Just how various data communications hardware, software, and systems tools are used to gain optimum efficiency in key operations and business applications will be discussed. Spokesmen from major utilities will explore the important applications advances.

(AW-3) Time-Shared Services and Systems - Time-sharing has become the answer for, if not a necessary complement to, the data processing operations of many organizations. Suppliers of such services use the latest data communications technology to enhance the utility of their services. How users can evaluate and apply time-sharing services will precede descriptions of how to select and use in-house time sharing systems.

Einar Stefferud (Chairman, AW-1), President, Network Management Associates, Huntington Beach, CA. A veteran with over 15 years in computers and networking, Mr. Stefferud provides consulting services to government, industry, and educational institutions in the areas of computer, communication and data networks. In addition, Mr. Stefferud has consulted with several leading universities in the study of advanced message systems. He is also an author and lecturer on the subject of electronic mail.

Mr. J.C. McDaniels (Chairman, AW-2), General Sales Manager, CNCP Telecommunications, Toronto, Canada. Commencing his career in the telecommunication industry in 1934, Mr. McDaniels joined the Canadian National Telegraph Company where he held a variety of positions. Since the merger of CNT into CNCP in 1965, his responsibilities have included many operations and sales management activities at the utility.

Mr. F.H. Reagan, Jr. (Chairman, AW-3), Managing Editor, Data Communication Services for Datapro Research Corporation, Delray, NJ. Mr. Reagan is directing research and publication of an information resource on time-sharing products and services currently being offered in the market. He has authored numerous published articles on data communications and computer technology; and has served as discussion leader for data communications workshops. Prior to his affiliation with Datapro, Mr. Reagan performed editorial and consulting functions for Auerbach Corporation and General Electric.

(AW-4) EFTS - The Federal Commission on EFT is cutting through the red tape tying the hands of many organizations interested in electronic funds transfer. On a state-by-state basis, many companies have proceeded to the implementation stage. This application workshop will get at the policy and product issues that need to be overcome. Some users who are up and running will share their experiences.

(AW-5) Point of Transaction Systems - In an age where seconds count, data communications provides the transaction medium for applications such as credit authorization, security, data entry, etc. Devices as common as a telephone now serve as terminals to get the message through. Major applications areas for proven point-of-transaction systems will be addressed in workshop fashion. Experienced users will explain the tools and techniques that have made their systems successful.

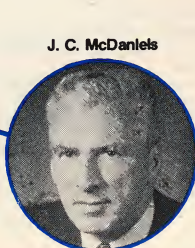
(AW-6) Distributed Computing - Never have so many had so much to say about putting computing power in the hands of the user. Focusing on the issues, the multifaceted approaches of distributed computing will be discussed at a conceptual and applications level by leading spokesmen and practitioners. A thorough airing of the potentials and procedures in implementing a distributed computing approach should refine the decision making process for attendees.

Jack McDonnell (Chairman, AW-4), Director of the Technology and Telecommunication program, National Commission on EFT, Washington, D.C. As a member of the Senior Staff of the National Commission on Electronic Fund Transfers, Mr. McDonnell has established an excellent reputation for getting at the issues. He has extensive experience in the design and development of computer systems, data communications, and terminals. His extensive work experience includes several years with the National Security Agency, where he was Chairman of the Computer Peripheral Manufacturers Association.

William A. (Bill) Sommerfield (Chairman, AW-6), Vice President & Editorial Director for all AUERBACH Editorial activities. His function is to supervise all of the activities and personnel that interact with the editorial development of products. Mr. Sommerfield has served as Vice President of Scott Foresman's University Division and as the Editor-in-Chief of Time Magazine's General Learning Press. He is frequently an industry spokesman at meetings and conventions, and recently published an article on the philosophical and management considerations for distributed computing.



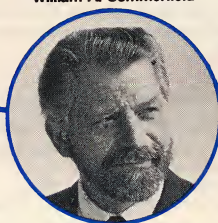
Einar Stefferud



J. C. McDaniels



Fannie H. Reagan, Jr.



William A. Sommerfield



John McDonnell, Jr.

Management Workshops

Organizations are often so busy with the operations aspects of data communications, they cannot address the management issues so critical to overall success. Key areas for management focus include plans for growth, data communications department organization, hiring and training people, and contractual policies for vendor relations. Four workshops are devoted to these key areas to assist managers in improving their entire operation.

(MW-1) Planning and Forecasting - How, when and where to take your next step in data communications takes planning. What product and policy issues will loom large in the future and how to plan for them today will be addressed by knowledgeable consultants and users. Attendees should learn to sharpen their focus on future cost-effectiveness.

(MW-2) Organizing Data and Communications Functions - The organizational battle over who is responsible for data communications continues to disrupt the efficient flow of many operations. Alternatives are offered in management approaches, such as line vs. staff, centralized vs. decentralized, and data processing vs. communications. Attendees will learn of different organizational effects and their inherent potential for productivity.

William T. Rush, Jr. (Chairman, MW-1), Senior Associate, Information Systems Services Division of Booz, Allen & Hamilton Inc., New York, NY. His experience encompasses data and voice communications systems design, implementation, maintenance, marketing, sales and management. Mr. Rush has designed major data networks including use of state of the art distributed network and packet switching techniques. Past positions include: Branch Manager and Regional Analyst Manager for UNIVAC's Communications Terminals Division, Communications Manager for a time-sharing company and assignments within the Bell organization.

Howard Anderson (Speaker, MW-1), An established researcher and consultant on computer communications trends, Mr. Anderson is recognized for his studies on facsimile, word processing and transmission services. He is currently investigating the differing product and marketing approaches of IBM and AT&T as these giants reconfigure their shares of the data communications market.

Murray H. Robinson (Chairman, MW-2), President of Murray H. Robinson and Associates, Ltd., Ottawa, Canada. Mr. Robinson's organization specializes in management planning, system design, and procurement studies for large-scale data and computer communications networks for industry, government, and the military. He has held various management positions with the Trans-Canada Telephone System and has lectured frequently for AMA and AMR.

(MW-3) Hiring and Training Data Communications Personnel - Good people are the backbone of any successful data communications link. But where do you find them, and how do you hire and train them to meet your application needs? These questions face many users, and may have different answers for each situation. Knowledgeable speakers will give attendees a road map of where to look for new hires and how to get them on board fast.

(MW-4) Contractual Considerations - If you've ever felt yourself locked into a contract you didn't like, you'll benefit from this important workshop. There are many confusing elements in a contract beyond legal language, and the intent of the agreement is often abused for the sake of some misunderstood detail. Experienced professionals in the contract area will cover the important issues, loopholes, and considerations for negotiation.

Raymond V.K. Ewbank (Chairman, MW-3), Director of Communications and Education, Control Data Canada, Ltd., Ottawa. For twenty years Mr. Ewbank held managerial positions with Bell, Canada. As a Project Manager of various telecommunication study teams, Mr. Ewbank traveled around the globe. He has authored numerous papers and moderated a number of conferences.

Andrew Olson (Chairman, MW-4), Managing Director, TEAM International, Manhattan Beach, CA. Mr. Olson's firm provides marketing and management consulting services in the international application of data processing systems for health care administration. He was a Senior Technology Advisor at Systems Development Corp., where he worked on applications of datacomm networks.



William T. Rush, Jr.



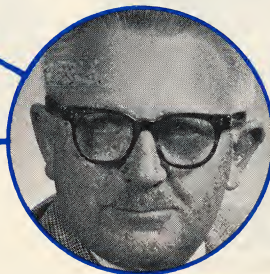
Howard Anderson



Murray Robinson



Andrew Olson



Raymond V. K. Ewbank

Highlight Sessions

Vital issues on evolving products and policies are addressed in ten highlight sessions. New product developments and their impact on existing systems are discussed to prepare users for inevitable change. Those policies directly and indirectly affecting the future of data communications are also analyzed. Leading users, consultants, suppliers and policy makers will contribute their insights on the critical issues that face attendees in the near term.

(HS-1) Graphics Terminals - The scope of graphics applications has been broadened through data communications. Graphics terminals now find homes in the most remote locations to handle chores for business as well as the sciences. A look at the benefits data communications adds to various graphics applications should offer refreshing alternatives to graphics terminal users.

(HS-2) International Standard X25 - Packet switching appears to be a boon to data communications efficiency both domestically and internationally. TELENET has already established a link with Canada, while other carriers and countries are attempting to get their interface standards together as well. Just what progress has been made in implementing uniform versions of X25, and what stumbling blocks are left to hurdle, will be discussed for those contemplating using such services.

Dr. Stanley Cohen (Chairman, HS-1), Senior Scientist, Physics Division and Director, Speakeasy Center, Argonne National Laboratory, Argonne, IL. Dr. Cohen's considerable computer graphics experience brought him to create and develop Speakeasy, a widely used terminal-oriented interactive computer language to handle graphics applications. He is presently Speakeasy project manager for SHARE, IBM's user group. His extensive knowledge of graphics terminals and their applications for business and industry is well documented.

Dr. Joel N. Orr (Speaker, HS-1), President, Jerusalem Systems, Milwaukee, WI. An established consultant in computer graphics, Dr. Orr's attentions have been focused on the extension of graphics capability through data communications. He has accumulated experience in a variety of industrial design environments, where his contributions were in hardware/software evaluation and systems design. He is the technical editor of Computer Graphics Newsletter, a monthly magazine published by Jerusalem Systems.

Stuart L. Mathison (Chairman, HS-2), Vice President, Corporate Planning, Telenet Communications Corp. Stuart Mathison joined Bolt Beranek and Newman Inc. in 1972, and subsequently became one of the founders of its subsidiary, Telenet Communications Corp. Previously, he was a staff member in the field of data communications at Arthur D. Little, Inc., and served as consultant to the Antitrust Division of the U.S. Department of Justice, working on computer-communication policy problems.

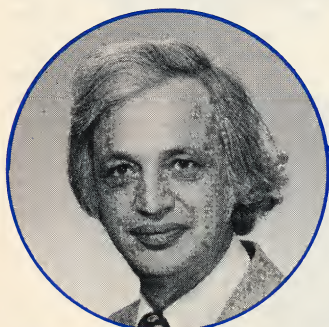
(HS-3) Teleconferencing - Where and how to apply teleconferencing still evades many users. An update on progress made and practical results achieved should improve attendee grasp of this developing communication concept. Speakers with both knowledge and applications experience in teleconferencing will provide a meaningful forum for the inquisitive attendee. It is suggested that attendees specifically interested in teleconferencing also take advantage of session AW-1 on electronic mail.

(HS-4) Microprocessor Payoffs - Data communications systems readily accept the cost-performance improvements of microprocessing. Terminals, interfaces, communications processors, etc., right up to host computers, find productive use for micros. What users need to know about evaluating and using microprocessor-equipped products will be addressed. Attendees will also get a look at what the future holds in applications of this fast-moving technology.

David J. Horton (Speaker, HS-2), Assistant Vice President, Computer Communications Planning Group Headquarters, Bell/Canada. He is a Governor of the International Council of Computer Communications and a Director of Bell Northern Research Inc., in California. Mr. Horton, an engineer, was General Supervisor, Data and Interexchange Rates in Montreal for Bell and is well qualified to discuss the ramifications of the X 25 Standard.

Dr. Featheringham (Chairman, HS-3), Assistant Professor of Computer and Information Science at New Jersey Institute of Technology. His current research involves the evaluation of the Electronic Information Exchange System (EIES), a computer conferencing system developed by NJIT for the National Science Foundation and currently used by small scientific research groups throughout the country. Dr. Featheringham's previous background includes a variety of design and consulting efforts in business and military information systems.

Einar Stefferud (Speaker, HS-3), President of Einar Stefferud & Associates, Huntington Beach, CA. A veteran with over 15 years in computers and networking, Mr. Stefferud provides consulting services to government, industry, and educational institutions in the areas of computer, communication and data networks. In addition, Mr. Stefferud has consulted with several leading universities in the study of advanced message systems. He is also an author and lecturer on the subject of electronic mail.



Dr. Stanley Cohen



Stuart L. Mathison



Einar Stefferud



David J. Horton



Kenneth B. Hanley

Highlight Sessions

(HS-5) Privacy and Security - While technology develops rapidly in data communications, concern continues to grow over the too often neglected issues of privacy and security. Passage of the Privacy Act, design of encryption algorithms, scramblers, computerized passwords, etc., are attempts at securing privacy of records and data now accessed faster and more efficiently through data communications. To what extent and at what cost should attendees implement secure systems procedures to ensure privacy will be emphasized.

(HS-6) Word Processing Nets - A growing dimension in word processing is the facility to communicate text and letters quickly vis-a-vis electronic mail. The advent of new technology such as the microprocessor can help to redefine the word processing terminal as a data communications terminal. The concepts of clustered interactive terminals, store and forward systems, and networks are entering the vocabulary of the word processing user. Attendees responsible for data communications will learn how to assist in managing the development of word processing in their organization.

(HS-7) Protocol Transparency - Effective use of different computers tied into a network suggest the dilemma of mixing apples and oranges. To avoid translation and communication problems, we have protocols...and more protocols. Users are challenged to find a way of making data universally acceptable at all critical points of the network. The protocol must provide a medium of transparency, so that any user at any terminal can access any type of computer or terminal in the net. Attendees will discover how far we have come in achieving protocol transparency.

Kenneth B. Hanley (Chairman, HS-4), Manager Systems Products Planning, Motorola, Inc., Semiconductor Group Microsystems Department, Phoenix, AZ. Mr. Hanley is in charge of Product Planning for vertical integrated products based on M6800 microprocessor family, including: terminals, peripheral subsystems, multi-processor networks and network elements. His background includes work as a Program and Product Manager with Varian Data Machines, Honeywell Information Systems, and General Electric.

(HS-8) CATV - Cable television systems have penetrated most major cities nationwide. Some progressive users have investigated CATV as a carrier for their short-haul communications. Existence of facilities at cost-effective prices should not be ignored as an alternative for data communications. Experiences of users who have tasted success with CATV will be discussed to point the ways and means of evaluating and applying such a service.

(HS-9) Facsimile Systems and Services - Another communication alternative of growing importance exists in low-cost facsimile transmission of hard copy. Now commonplace in the office, facsimile units continue to reduce in cost while increasing their operating speed. Networks of fax units and dedicated fax services suggest new developments for attendees to analyze for potential improvements and productivity.

(HS-10) Users Vend Excess Capacities - Many users are getting extra mileage from their data communication system by vending their excess capacity to other users. Large dedicated networks spanning the country may offer cost-effective alternatives to users aware of their availability. Those users who have such nets may also realize a new potential in subsidizing the cost of the services by offering available time and channels to others. How some users organize themselves to take advantage of these approaches will be discussed.

Dr. Paul Armer (Chairman, HS-5), Industry Consultant, Presently working with On-Line Systems, Inc., San Francisco, CA. Amassing several academic and industry achievements over his many years in data processing, Dr. Armer is presently on special assignment developing a software package for interactive text editing and remote job entry. He has managed large data communications based installations at Stanford University and the Rand Corporation. His contribution to research and education span positions at Stanford and Harvard. He has consulted for four Presidential commissions, served as President of AFIPS and written extensively in professional journals.

Ray W. Sanders (Chairman, HS-7), President of Computer Transmission Corporation (TRAN), El Segundo, CA. Mr. Sanders' company designs and produces hardware and software for medium and large-scale digital communication networks. Prior to founding the company in 1969, Mr. Sanders held a number of executive positions in companies designing and manufacturing large digital systems.

Alan Maltz (Chairman, HS-8), Assistant Vice President, Bankers Trust Co., New York, NY. Responsible for many corporate communications projects, Mr. Maltz has extensive experience in data communications. He was instrumental in the initial evaluation and use of cable television as a medium for high-speed computer communication. A licensed, professional engineer, his work experience includes assignments with Western Union International and New York Telephone Co.

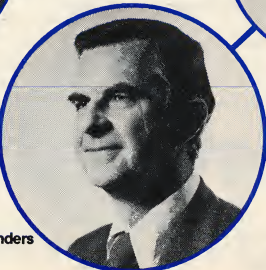
George Smith (Chairman, HS-10), Director Telecommunication Marketing for Avis. As Marketing Director, Mr. Smith has found other uses for the excess capabilities of Avis' nation-wide telecommunication network. He was V.P. Marketing for Wells TP Sciences, Manager Product Planning at Western Union for five years and a real-time programmer at US Steel.



Dr. Paul Armer



Alan Maltz



Ray W. Sanders



George Smith

Technology Workshops

The continued improvement in data communications productivity is driven forward by new technology. New application dimensions are uncovered, defined and made productive through research and development efforts from both supplier and user communities. Certain of these more complex concepts will be discussed in seven technology workshops. Sophisticated users and suppliers should gain from a more detailed look at some emerging aspects in these technologies.

(TW-1) Communications Theory - Taking a closer look at the physics of communications can resolve many mysteries and improve one's ability to create better systems and keep them running. Analysis of basic analog/digital wave forms and often incurred signal impairments will be discussed. Considerations for type of carrier, channel speed, and data formatting will be covered.

(TW-2) Advanced Message Switching - Complexities of large domestic and international networks require a high level of switching capability. Many organizations have met the challenge of efficiently handling large volumes of data through advanced message queuing and routing systems. Some of the more interesting approaches will be discussed in this workshop to broaden the thinking of system and network designers.

(TW-3) High Speed Communications - Many sophisticated users join suppliers in their desire for higher speed communications capability. Higher speed may be an operations requirement or a way to more economical unpackaging of volume discounted channels. Evaluations of what services and approaches are available to optimize speed and cost should accelerate attendee decision making.

(TW-4) Developing Transmission Concepts - Inventiveness in communications has brought us new transmission techniques and vehicles. Advances in such areas as digitized voice, laser communications, satellites, CATV, etc., feed the expansion of data communications. Progress in these areas will be discussed to provide attendees a view of new potentials for productivity.

Howard Cravis (Chairman, TW-1), Member, Senior Professional Staff, Telecommunications Sciences Section, Arthur D. Little, Inc., Cambridge, MA. Mr. Cravis' recent work has included evaluation of a packet-switched network for a major North American common carrier, considering both technical implementation and marketing strategies for new service offerings. He has also been establishing the technical performance requirement for a message-switching system serving 230 user organizations.

D.P. Fulghum (Chairman, TW-4), Program Manager of Speech Programs at E-Systems Inc., Garland, Texas. Mr. Fulghum has been with E-Systems and its predecessor, LTV Electrosystems, since 1967, with the exception of two years he spent at Milgo Corporation in Florida. The work for Milgo was design and development of telephone line modems and test units. At E-Systems, Mr. Fulghum has been in charge of speech digitizer research and development.

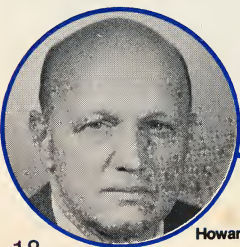
(TW-5) Technical Control - Major emphasis has been placed on maintaining the continuity, responsiveness, quality and cost control of data communications systems. The "tech control center" has become the focal point for this effort. Hardware/software systems are now being applied to monitor and maintain all facets of network operation. Extensive coverage of this topic begins with a discussion of fundamentals in Product Update PU-4. This workshop adds the dimension of administrative procedure for effective tech control.

(TW-6) Technical Control - A companion session to TW-5, this workshop emphasizes a detailed look at the hardware/software products available to achieve effective tech control. Where possible, "hands-on" demonstrations will assist attendees in understanding and evaluating what is needed in their operation. Tours of specific product exhibits and nearby user facilities will be arranged for those dedicated to implementing technical control approaches.

(TW-7) Network Simulation Techniques - Complex networks and their traffic analyses would be practically impossible without the tools of simulation. Specialized software packages using scientifically designed algorithms work at providing optimized net designs for users. Equally important are the projection of alternatives for route and traffic strategies to guide users more definitively while ensuring their next step is a cost-effective one. Attendees will learn of the types of simulation approaches and tools available to optimize their net strategies.

Ted S. Britton (Chairman, TW-6), Remote Site Manager, Information and Computer Services Division, State of Georgia, Atlanta, GA. Responsibility for the operational management of nine remote computer sites represents the latest of many data communications related assignments. Mr. Britton has held with the State of Georgia. His major efforts are in technical support for all teleprocessing hardware in a network involving 750 terminal devices and seven large mainframes. He also provides management for the Scientific Data Acquisition and Processing project areas within the I & CS's jurisdiction.

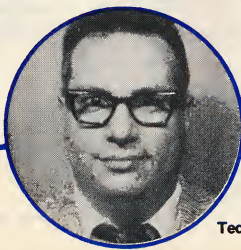
Thomas F. Wyrick (Chairman, TW-7), Staff member of the Applications Directorate of the Federal Computer Performance Evaluation and Simulation Center, Washington, D.C. Since joining FEDSIM in March 1974, Mr. Wyrick has specialized in the design, evaluation, and selection of teleprocessing systems components, and services. He has served in several computer and data communications operating capacities. Mr. Wyrick has given presentations on simulation techniques at many important industry meetings.



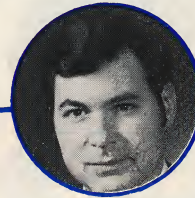
Howard Cravis



D. P. Fulghum



Ted S. Britton



Thomas F. Wyrick

Registration/Reservations

Spouses Program

From peaches in champagne to mint juleps, your spouse will be treated to Southern cuisine and hospitality for two enjoyable days, while you're busy with conference sessions. A potpourri of exciting daytime activities will make INTERFACE in Atlanta a mini-vacation for the woman in your life.

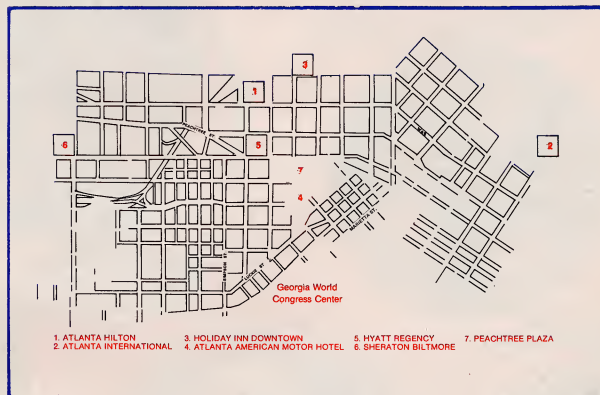


She'll love Atlanta, both "old and new", as a result of covering highlights of the city and nostalgia with emphasis on contrasts in the "new and old South". Modern Atlanta, the Peachtree Center, Omni International Complex...contrasting with the old...the elegant Northwest residential area, the historical Swan House and a visit to suburban Roswell.

Some Program Highlights

- Stone Mountain Park, a 3200-acre scenic Park with the world's largest sculptured art.
- The Plantation, a complex of authentic antebellum buildings restored and furnished as they were before the "War Between the States".
- Roswell, a walking tour by guides in Southern Belle costumes through stately old Southern mansions...in the shadow of the Blue Ridge Mountains.
- Lunches, including Aunt Fanny's Cabin, a 150-year-old former slave's cabin converted into a family-style Southern restaurant.
- Shopping, at the "Fifth Avenue of the South", famous Phipps Plaza and Lenox Mall shopping centers.

Spouses Program Fee: \$45; register in the form below.



CONFERENCE REGISTRATION: Special "team rate" discounts are applicable when you register 3 or more persons from the same location of your organization.

Registration Fee	3 Full Days	Single Day
1st and 2nd attendees, each	\$95	\$50
3rd and more attendees, each	\$50	\$25

**For Instant Registration or additional information
CALL TOLL FREE (800) 225-4620** Within Massachusetts, call Collect (617) 879-4502

use a separate coupon for each member of your organization, make copies for additional registrants.

Name _____
Title _____
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My registration check is enclosed and payable to
DataComm Interface, Inc. for \$ _____

☐ Please bill me ☐ Fee for Spouses Program Included
☐ Please bill me for Spouses Program

In the event of cancellation, registration fee will be refunded if notice is received prior to March 1, 1977. If received after March 1, 1977, fee will be applied toward registration for INTERFACE '78.

CONFERENCE REGISTRATION HOTEL RESERVATION COUPON

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INTERFACE '77
160 Speen Street
Framingham, MA 01701

indicate the order of your hotel preference.
enter numbers 1, 2, & 3 in column "choice"

CHOICE	HOTEL	Single	Double	Suite
	Atlanta Hilton*	29-55	30-60	94 UP
	Atlanta International	22-27	27-35	85 UP
	Holiday Inn Downtown	24-27	33-36	70 UP
	Atlanta American	25-29	29-35	60 UP
	Hyatt Regency	30-45	38-53	—
	Sheraton Baltimore	26-30	32-38	55 UP
	Peachtree Plaza	33-46	43-56	100 UP

* Headquarters Hotel

Estimated Arrival: Date _____ Time _____
Departure: Date _____ Time _____

Please check the entry that best describes the end product or service of your organization at your location

- ☐ Banking
- ☐ Insurance
- ☐ Securities
- ☐ Business Services
- ☐ Service Industries
- ☐ Wholesaling
- ☐ Transportation
- ☐ Retailing
- ☐ Manufacturing
- ☐ Process Industries
- ☐ Power Utilities
- ☐ Law Enforcement
- ☐ Education
- ☐ Health Care
- ☐ Government
- ☐ Manufacturing (Data Communications or Computer Related)
- ☐ Communications Utility

The Critical Event

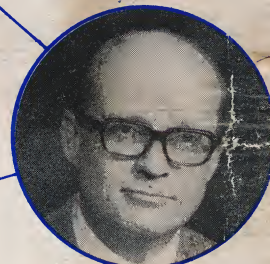
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The INTERFACE '77 Program Committee in conjunction with leading data communications users, suppliers and consultants has formulated program policy and procedure, coordinated speaker selection, and organized session content.



BERNARD STRASSEURG
Communications Consultant
and Former Chief, FCC
Common Carrier Bureau



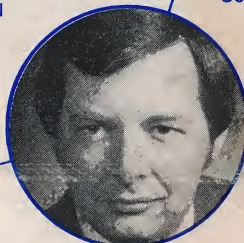
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President, Network Analysis
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DataComm Interface, Inc.
160 Speen Street
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